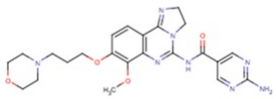
Data Sheet (Cat.No.T6322)

TargetMol
A DRUG SCREENING EXPERT

Copanlisib

Chemical Properties



CAS No.:	1032568-63-0
Formula:	C23H28N8O4
Molecular Weight:	480.52
Appearance:	N/A
Storage:	0-4℃ for short term (days to weeks), or -20℃ for long term (months).

Biological Description

Description	Copanlisib is a phosphoinositide 3-kinase (PI3K) inhibitor with potential antineoplastic activity. Copanlisib inhibits the activation of the PI3K signaling pathway, which may result in inhibition of tumor cell growth and survival in susceptible tumor cell populations. Activation of the PI3K signaling pathway is frequently associated with tumorigenesis and dysregulated PI3K signaling may contribute to tumor resistance to a variety of antineoplastic agents.
Targets(IC_{50})	PI3Kα: 0.5nM PI3Kδ: 0.7nM PI3Kβ: 3.7nM PI3Kγ: 6.4nM
In vitro	In both KPL4 cells and LPA-stimulated PC3 cells, BAY 80-6946 reduces pAKT levels. In a subset of human cancer cell lines with PIK3CA mutations and/or overexpression of HER2, BAY 80-6946 shows antiproliferative activity and induces apoptosis. [1] The combination of HER2-targeted therapies and BAY 80-6946 inhibits growth more effectively than either therapy used alone, and can restore sensitivity to trastuzumab and lapatinib in cells. [2]
In vivo	In rat KPL4 or HCT116 tumor xenograft model, BAY 80-6946 (6 mg/kg, i.v.) induces 100% complete tumor regression. In nude mice with Lu7860 erlotinib-resistant, patient-derived NSCLC and MAXF1398 patient-derived luminal breast tumor models, BAY 80-6946 (14 mg/kg, i.v.) also causes tumor growth inhibition. [1]
Kinase Assay	Biochemical lipid kinase assays: The effect of BAY 80-6946 on PI3Kα, PI3Kβ, and PI3Kγ activity is measured by the inhibition of 33P incorporation into phosphatidylinositol (PI) in 384-well MaxiSorp® plates coated with 2 µg/well of PI and phosphatidylserine (PS) (1:1 molar ratio). In each PI3K isoform assay, 9 µL of reaction buffer (50 mM MOPSO, pH 7.0, 100 mM NaCl, 4 mM MgCl2, 0.1% BSA) containing 7.5 ng of His-tagged N-terminal truncated p110α or p110β protein, or 25 ng of purified human p110γ protein, is used. The reaction is started by adding 5 µL of a 40-µM ATP solution containing 20 µCi/mL [33>/sup>P]-ATP. After 2 hours incubation at room temperature, the reaction is terminated by addition of 5 µL of a 25-mM EDTA solution. The plates are washed and Ultima Gold™ scintillation cocktail (25 µL) is then added. The radioactivity incorporated into the immobilized PI substrate is determined with a BetaPlate Liquid Scintillation Counter.

Cell Research	Cell proliferation over a 72-hour period is determined using the CellTiter-Glo® luminescent cell viability kit. Briefly, cells are plated in separate microtiter plates. Following an overnight incubation at 37ºC, luminescence values in the t=0 hour plates are determined. Test compounds diluted in growth medium are added to the t=72 hour plates, and the cells are then incubated for 72 hours at 37ºC. Luminescence values are determined with a Wallac 1420 Victor2™ 1420 multilabel HTS counter after a 10-minute reaction with CellTiter-Glo® solution. The percentage inhibition of cell growth is calculated by subtracting the luminescence values in the t=0 hour plates from the corresponding values in the t=72 hour plates. Differences in values between drug-treated cells and controls are used to determine the percentage inhibition of cell growth.(Only for Reference) Cell lines: A series of cancer cell lines
Animal Research	Animal Model: Rats bearing KPL4 or HCT116 xenografts

Solubility Information

Solubility	DMSO: Insoluble Water: Insoluble (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.081 mL	10.405 mL	20.811 mL
5 mM	0.416 mL	2.081 mL	4.162 mL
10 mM	0.208 mL	1.041 mL	2.081 mL
50 mM	0.042 mL	0.208 mL	0.416 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. The storage conditions and period of the stock solution: - 80 ℃ for 6 months; - 20 ℃ for 1 month. Please use it as soon as possible.

Reference

1. Liu N, et al. Mol Cancer Ther. 2013, 12(11), 2319-2330.
2. Elster N, et al. Breast Cancer Res Treat. 2015, 149(2), 373-383.

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